

conventional deceleration method. Here the "energy contaminant" is defined as a particle that is the same kind of element as a desired ion but has different energy from the desired ion. Such a contaminant particle reaches to a deeper position of the wafer than desired. If the concentration of the contaminant particles exceeds a criterion (typically  $1E18/cm^3$ ; depends on the structure of a semiconductor device), the junction depths are determined not by desired ions but by the energetical contaminant particles. Therefore, it is important to decrease the amount of the energy contamination. Because the concentration of the desired ions is fixed at an appropriate value to achieve good device-performance, the only way to reduce the amount of the energy contamination is to reduce the ratio of the energy contamination. Here the "energy contamination ratio is defined as a ratio of the number of particles implanted with an incorrect energy to the number of ions implanted with the correct energy.

**IN THE CLAIMS:**

Please amend claims 7 and 24 as follows. Attached is a marked-up copy showing changes to the claims.

7. (Twice Amended) An ion implantation method for use in an ion implantation apparatus comprising an ion source, an extraction electrode, a mass analysis unit, a mass analysis slit, and a wafer processing chamber, comprising the steps of:

deciding a target value of energy contamination in a wafer;